

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Withdrawn): A method for sticking a tape having a sticky surface to a surface of an adherend, comprising:

preparing the tape for sticking to the adherend, wherein said tape has a sticky surface and an opposed non-sticky surface;

attaching the tape via the non-sticky surface to a support film having a removable sticky surface, wherein the removable sticky surface of the support film contacts the non-sticky surface of the tape;

while subjecting the support film to tension, causing the sticky surface of the tape on the support film to be opposed to a surface of the adherend mounted on a mounting table;

sticking the tape to the adherend by pressing the support film; and

releasing the support film from the tape.

Claim 2 (Withdrawn): The method for sticking a tape according to claim 1, which comprises attaching a plurality of the tapes to the long support film along a longer direction, and transferring the support film whereby the tapes are stuck to respective adherends by repetition of following operations (i) to (iv):

(i) causing the sticky surface of the tape on the support film to be opposed to a surface of the adherend mounted on a mounting table;

(ii) sticking the tape to the adherend by pressing the support film;

(iii) releasing the support film from the tape; and

(iv) mounting a new adherend on the mounting table.

Claim 3 (Withdrawn): The method for sticking a tape according to claim 1, which involves a frame member for fixing the support film and comprises:

attaching and fixing the support film to the frame member such that the tape is included in a frame of the frame member;

causing the sticky surface of the tape in the frame of the frame member to be opposed to a surface of the adherend mounted on the mounting table; and

sticking the tape to the adherend by pressing the support film in the frame of the frame member.

Claim 4 (Withdrawn): The method for sticking a tape according to claim 3, which comprises relatively moving the frame member to which the support film is attached and the mounting table on which the adherend is mounted to perform alignment of the tape in the frame of the frame member with the adherend.

Claim 5 (Withdrawn): The method for sticking a tape according to claim 3, which involves:

providing a fixing roll for attaching and fixing the support film to the frame member;

providing a sticking roll for sticking the tape to the adherend;

providing a wind-up roll for the support film; and

establishing a fixed end of the support film;

and comprises:

moving the fixing roll toward the frame member while causing the fixing roll to press the support film between the wind-up roll and the fixed end, thereby transferring the tape attached to the support film between the wind-up roll and the fixing roll in a direction opposite to the wind-up direction such that the tape is included in the frame of the frame member;

causing the fixing roll to press the support film to fix the support film to the frame member;

causing the application roll to press the support film in the frame of the frame member to stick the tape to the adherend; and

moving the fixing roll away from the frame member simultaneously with releasing the support film from the tape and winding up the support film on the wind-up roll.

Claim 6 (Withdrawn): The method for sticking a tape according to claim 3, which involves:

providing a fixing roll for attaching and fixing the support film to the frame member;

providing a sticking roll for sticking the tape to the adherend; and

providing a clamping member for clamping the support film across a width of the support film;

and comprises:

clamping the support film at longer edge portions thereof with the clamping member and arranging the tape such that the tape is included in the frame of the frame member;

causing the fixing roll to press the support film to fix the support film to the frame member;

causing the sticking roll to press the support film in the frame of the frame member to stick the tape to the adherend; and

releasing the support film from the tape by relatively moving the clamping member.

Claim 7 (Withdrawn): The method for sticking a tape according to claim 1, wherein the adherend is a semiconductor wafer and the tape is a protective tape.

Claim 8 (Currently Amended): An apparatus for sticking protective tape to an adherend, [[,]] said apparatus comprising:

a mounting table having an adherend-mounting surface on which the adherend is mounted;

a frame member surrounding the adherend-mounting surface of the mounting table, the frame member having an interior length and an interior width defining an interior perimeter surrounding the adherend;

a movable fixing roll for attaching and fixing a long support film to the frame member, the fixing roll having a width greater than the interior width of said frame member such that said fixing roll does not fit within the interior perimeter of said frame member, the support film having a sticky and removable surface to which a pre-cut protective tape is attached, said pre-cut protective tape having a sticky surface, the protective tape being pre-cut to a size approximating a size of the adherend and adapted for being stuck to a surface of the adherend; and

a movable sticking roll for sticking the pre-cut protective tape to the adherend, the sticking roll having a width less than the interior width of said frame member such that said sticking roll fits within the interior perimeter of said frame member;

the apparatus being constructed such that:

the support film is arranged above the frame member so that the pre-cut protective tape is included in the frame member;

a mechanism for moving the fixing roll across said frame member to press the support film against the frame member to fix the support film to the frame member whereby the frame member relieves tension on said support film and the pre-cut tape;

a mechanism for moving the sticking roll within the interior perimeter of said frame member to press the support film and the pre-cut protective tape carried by the frame member to stick the pre-cut protective tape to the adherend; and

upon further movement of the sticking roll, the support film is released from the pre-cut protective tape, whereby the pre-cut protective tape is stuck to the adherend with a reduced residual stress.

Claim 9 (Previously Presented): The apparatus for sticking protective tape according to claim 8, which further comprises:

a wind-up roll for the support film, said wind-up roll defining a wind-up direction as a direction the support film moves after the pre-cut protective tape is stuck to the adherend; and

a fixed end of the support film located at a feed-out roll;

the apparatus being constructed such that:

when the fixing roll is moved toward the frame member while pressing the support film between the wind-up roll and the fixed end, the pre-cut protective tape attached

to the support film moves between the wind-up roll and the fixing roll in a direction opposite to the wind-up direction such that the tape is positioned in the frame member, whereby;

the fixing roll presses the support film to fix the support film to the frame member;

the sticking roll presses the support film in the frame member to stick the pre-cut protective tape to the adherend; and

the fixing roll moves away from the frame member and simultaneously the support film is released from the pre-cut protective tape and said support film is wound on the wind-up roll.

Claim 10 (Previously Presented): The apparatus for sticking protective tape according to claim 8, which further comprises a clamping member for clamping the support film across a width, the apparatus being constructed such that:

the support film is clamped at longer edge portions thereof with the clamping member and the pre-cut protective tape is arranged such that the tape is positioned in the frame member, whereby;

when the fixing roll presses the support film to fix the support film to the frame member, and

the sticking roll presses the support film fixed to the frame member to stick the pre-cut protective tape to the adherend,

the support film is released from the pre-cut protective tape by relative movement of the clamping member.

Claim 11 (Previously Presented): The apparatus for sticking protective tape according to claim 8, which further comprises aligning means for relatively moving the frame member to which the support film is attached and the mounting table on which the adherend is mounted to permit alignment of the pre-cut protective tape in the frame member with the adherend.

Claim 12 (Withdrawn): An apparatus for sticking a tape having a sticky surface to a surface of an adherend, which apparatus comprises:

a mounting table on which the adherend is mounted;

a press roll for pressing a long support film having a sticky and removable surface to which the tape is attached, to stick the tape to the adherend; and

a clamping member for clamping the support film across a width of said support film;

the apparatus being constructed such that:

the support film is clamped at longer edge portions thereof with the clamping member and the clamping member is moved to cause the sticky surface of the tape on the support film to be opposed to a surface of the adherend mounted on the mounting table;

the press roll is caused to press the support film to stick the tape to the adherend; and

the support film is released from the tape by relatively moving the clamping member.

Claim 13 (Previously Presented): The apparatus for sticking protective tape according to claim 8, wherein the adherend is a semiconductor wafer.

Claim 14 (Withdrawn): The method for sticking a tape according to claim 2, which involves a frame member for fixing the support film and comprises:

attaching and fixing the support film to the frame member such that the tape is included in a frame of the frame member;

causing the sticky surface of the tape in the frame of the frame member to be opposed to a surface of the adherend mounted on the mounting table; and

sticking the tape to the adherend by pressing the support film in the frame of the frame member.

Claim 15 (Withdrawn): The method for sticking a tape according to claim 4, which involves:

providing a fixing roll for attaching and fixing the support film to the frame member;

providing a sticking roll for sticking the tape to the adherend;

providing a wind-up roll for the support film; and

establishing a fixed end of the support film;

and comprises:

moving the fixing roll toward the frame member while causing the fixing roll to press the support film between the wind-up roll and the fixed end, thereby transferring the tape attached to the support film between the wind-up roll and the fixing roll in a direction opposite to the wind-up direction such that the tape is included in the frame of the frame member;

causing the fixing roll to press the support film to fix the support film to the frame member;

causing the application roll to press the support film in the frame of the frame member to stick the tape to the adherend; and

moving the fixing roll away from the frame member simultaneously with releasing the support film from the tape and winding up the support film on the wind-up roll.

Claim 16 (Withdrawn): The method for sticking a tape according to claim 4 which involves:

providing a fixing roll for attaching and fixing the support film to the frame member;

providing a sticking roll for sticking the tape to the adherend; and

providing a clamping member for clamping the support film across a width of the support film;

and comprises:

clamping the support film at longer edge portions thereof with the clamping member and arranging the tape such that the tape is included in the frame of the frame member;

causing the fixing roll to press the support film to fix the support film to the frame member;

causing the sticking roll to press the support film in the frame of the frame member to stick the tape to the adherend; and

releasing the support film from the tape by relatively moving the clamping member.

Claim 17 (Withdrawn): The method for sticking a tape according to claim 2,

wherein the adherend is a semiconductor wafer and the tape is a protective tape.

Claim 18 (Withdrawn): The method for sticking a tape according to claim 3 wherein the adherend is a semiconductor wafer and the tape is a protective tape.

Claim 19 (Withdrawn): The method for sticking a tape according to claim 4 wherein the adherend is a semiconductor wafer and the tape is a protective tape.

Claim 20 (Withdrawn): The method for sticking a tape according to claim 5 wherein the adherend is a semiconductor wafer and the tape is a protective tape.

Claim 21 (Withdrawn): The method for sticking a tape according to claim 6 wherein the adherend is a semiconductor wafer and the tape is a protective tape.

Claim 22 (Previously Presented): The apparatus for sticking protective tape according to claim 9, which further comprises aligning means for relatively moving the frame member to which the support film is attached and the mounting table on which the adherend is mounted to permit alignment of the pre-cut protective tape in the frame member with the adherend.

Claim 23 (Previously Presented): The apparatus for sticking protective tape according to claim 10, which further comprises aligning means for relatively moving the frame member to which the support film is attached and the mounting table on which the adherend is mounted to permit alignment of the pre-cut protective tape in the frame member with the adherend.

Claim 24 (Previously Presented): The apparatus for sticking protective tape according to claim 9, wherein the adherend is a semiconductor wafer.

Claim 25 (Previously Presented): The apparatus for sticking protective tape according to claim 10, wherein the adherend is a semiconductor wafer.

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Claim 26 (Previously Presented): The apparatus for sticking protective tape according to claim 11, wherein the adherend is a semiconductor wafer.

Claim 27 (Withdrawn): The apparatus for sticking a tape according to claim 12, wherein the adherend is a semiconductor wafer.